(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number
WO 2005/055248 A2

(51) International Patent Classification[7]: H01B 1/12, 1/20, C08L 39/04, H01L 51/30, 51/20

(21) International Application Number: PCT/GB2004/004973

(22) International Filing Date: 25 November 2004 (25.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0327654.0	28 November 2003 (28.11.2003)	GB
0407852.3	7 April 2004 (07.04.2004)	GB
0414347.5	26 June 2004 (26.06.2004)	GB

(71) Applicant *(for all designated States except US)*: AVECIA LIMITED [GB/GB]; Hexagon House, Blackley, Manchester M9 8ZS (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: BROWN, Beverley, Anne [GB/GB]; P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB). VERES, Janos [GB/GB]; P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB). ANEMIAN, Remi, Manouk [GB/GB]; P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB). WILLIAMS, Richard, Thomas [GB/GB]; P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB). OGIER, Simon, Dominic [GB/GB]; P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB). LEEMING, Stephen, William [GB/GB]; P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB).

(74) Agents: TEASDALE, Nicola, Joanne et al.; Avecia Limited, Intellectual Property Limited, P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

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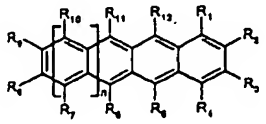
(54) Title: IMPROVEMENTS IN AND RELATING TO ORGANIC SEMICONDUCTING LAYERS



(A)

(57) Abstract: An organic semiconducting layer formulation, which comprises: an organic binder which has a permittivity, ε, at 1,000 Hz of 3.3 or less; and a polyacene compound of Formula: A: wherein: each of R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_{10}, R_{11} and R_{12}, which may be the same or different, independently represents hydrogen; an optionally substituted C_1-C_{40} carbyl or hydrocarbyl group; an optionally substituted C_1-C_{40} alkoxy group; an optionally substituted C_6-C_{40} aryloxy group; an optionally substituted C_7-C_{40} alkylaryloxy group; an optionally substituted C_2-C_{40} alkoxycarbonyl group; an optionally substituted C_7-C_{40} aryloxycarbonyl group; a cyano group (-CN); a carbamoyl group (-C(=O)NH_2); a haloformyl group (-C(=O)-X, wherein X represents a halogen atom); a formyl group (-C(=O)-H); an isocyano group; an isocyanate group; a thiocyanate group or a thioisocyanate group; an optionally substituted amino group; a hydroxy group; a nitro group; a CF_3 group; a halo group (Cl, Br, F); or an optionally substituted silyl group; and wherein independently each pair of R_2 and R_3 and/or R_8 and R_9, may be cross-bridged to form a C_4-C_{40} saturated or unsaturated ring, which saturated or unsaturated ring may be intervened by an oxygen atom, a sulphur atom or a group shown by formula -N(R_a)- (wherein R_a is a hydrogen atom or an optionally substituted hydrocarbon group), or may optionally be substituted; and wherein one or more of the carbon atoms of the polyacene skeleton may optionally be substituted by a heteroatom selected from N, P, As, O, S, Se and Te; and wherein independently any two or more of the substituents R_1-R_{12} which are located on adjacent ring positions of the polyacene may, together, optionally constitute a further C_4-C_{40} saturated or unsaturated ring optionally interrupted by O, S or -N(R_a) where R_a is as defined above) or an aromatic ring system, fused to the polyacene; and wherein n is 0, 1, 2, 3 or 4, also claimed is an electronic device, particularly an organic field effect transistor comprising the organic semiconductor layer formulation.

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